

## CLAIMS

1. A radio communications device, comprising:

5 a transmitter having a modulator with an output coupled to an  
input of an amplifier;

an integral control device having an integral control output  
coupled to a control input of the amplifier;

10 an error signal circuit having a feedback input coupled to an  
output of the amplifier, the error signal circuit having a corrected reference  
input and an error output coupled to an error input of the integral control  
device;

15 an integral control device controller having an input coupled to  
the integral control output of the integral control device, the integral control  
device controller having a controlled output coupled to the amplifier control  
input, the integral control device controller having a limit reference input;

a reference signal control circuit having a first input coupled to  
the first error output of the error signal circuit, an error output of the  
integral control device controller coupled a second reference control input  
of the reference signal control circuit;

20 a reference signal correction circuit having a reference input,

a reference control output of the reference signal control circuit  
coupled to a reference control input of the reference signal correction circuit.

2. The radio communications device of Claim 1, the reference signal control circuit having a threshold input.

5                   3. The radio communications device of Claim 2, the reference signal control circuit for providing a corrected reference signal to the reference signal correction circuit if an error signal of the error signal circuit exceeds a saturation threshold of the reference signal control circuit.

10                   4. The radio communications device of Claim 1, the reference signal control circuit and the reference signal correction circuit for adjusting a corrected reference signal to the error signal circuit by an amount approximately equal to an error signal of the error signal circuit.

15                   5. The radio communications device of Claim 1, the reference signal control circuit and the reference signal correction circuit for adjusting a corrected reference signal to the error signal circuit by an amount greater  
20                   than an error signal of the error signal circuit.

6. The radio communications device of Claim 1, the reference signal control circuit and the reference signal correction circuit for adjusting

a corrected reference signal to the error signal circuit by an amount less than an error signal of the error signal circuit.

5                   7. The radio communications device of Claim 1, the integral control device controller for limiting a control signal input to the amplifier based on a limit reference input of the integral control device controller.

10                   8. The radio communications device of Claim 1, the transmitter has a digital control loop, the reference signal control circuit and the reference signal correction circuit for adjusting a corrected reference signal to the error signal circuit based upon an error signal of the integral control device controller and an error signal the error signal circuit.

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